NC STATE UN	IVERSITY	Y FLEET				Scott T. Jenn	ings		
SED	VICES		621 Motor Pool Rd.	1		919-515-988	4		
SEN	VICES		Raleigh	NC	27695	scott jennings@	ncsu.edu		
Fleet Ir	nformation		Fuel In	formation		Fu	ling Infr	astructure	e
Total Leased Vehicles		293	State Titled	Vehicles Onl	у	Location	Age	Size	Fuel
Total County Titled Vel	hicles	0	Fuel Type	Gallons	Pet. Eqv.	Motor Pool	12 yrs	6000	Diesel
Total State Titled Vehic	cles	254	Gasoline	114,380	114,380	Motor Pool	12 yrs	20000	Gas
Total Other Vehicles			E10	-	-				
			E85	-	-				
Breakdown of Stat	te Titled Vehic	cles Only	Diesel	-	-				
Vehicle Type	Quantity	Miles	Off-road Diesel	-	-				
Gasoline Only	243	1,265,772	B5	-	-				
Diesel	11	73,908	B20	17,911	17,911				
Hybrids	-	-	B100	-	-				
Flex-fueled Vehicles	-	-	CNG	-	-				
Comp Natural Gas	-	-	Propane	-	-				
Propane	-	-	Other	-	-				
Electric	-	-		Quarts					
Other	-	-	Petroleum Motor Oils	2520	630				
10% Eligible	-	-	Syn & Rec Motor Oils	-	-				
Totals	254	1,339,680		Total	132,921				
adj 5% for growth	267	1,406,664	adj		139,567				
Instructions			Notes/Comments			Potentia	l for Biof	fuels Expa	nsion
Fill out all information (exce	ption - miles if N	V/A)				Location	Space	Tk Size	Fuel
Complete with data from fise	cal year 2004-200	05							
Please note if fuel includes n	nore than State V	<i>v</i> ehicles							
Count hybrids and FFV's onl	ly once in the bre	akdown,							
do not count them as gas	oline vehicles								
10% Eligible vehicles includ	le police & emerg	gency							
10% eligible educational veh	nicles must have								
specific modifications fo	r instructional pu	irposes							
Potential Reduction in	Petroleum u	se for your org	anization;	Pr	rojected Reduc	ction		Petro	oleum
Conservation	Reduce speed	ds, efficient cars	, task pooling	3,988	gallons	= 3.00%		Displa	cement
E10	Using E10 fo	or all gasoline ve	ehicles	11,438	gallons	= 8.61%		Goal :	20.0%
E85	Using E85 fo	or all flex-fueled	vehicles	-	gallons	= 0.00%		26,584	gallons
B5	Using B5 for	all diesel vehic	les	-	gallons	= 0.00%	ad	j 27,913	gallons
B20	Using B20 fo	or all diesel vehi	cles	3,582	gallons	= 2.69%			
P100	Using B100	in 1/10th of you	r diesel vehicles	-	gallons	= 0.00%			
Б100	U				т. т				
FFV	Substituting	one FFV using l	E85	356	gallons	= 0.27%			
FFV CNG/Propane	Substituting Replacing on	one FFV using l ne vehicle with a	E85 CNG/LPG car	356 523	gallons gallons	= 0.27% = 0.39%			
FFV CNG/Propane Electric	Substituting Replacing on Replacing on	one FFV using late vehicle with a ne vehicle with a	E85 CNG/LPG car n electric car	356 523 523	gallons gallons gallons	$= 0.27\% \\ = 0.39\% \\ = 0.39\%$			

used so as not to penalize early adoption of B20

(a) Under Petroleum Motor Oils - Converted gallons to quarts 10/06

adjusted for growth: applies to 2006-07 and 2008-09 figures

NC STATE FLEET	UNIVERSITY SERVICES		Scott T. Jennings 919-515-9884 scott_jennings@ncsu.e	du			
Petroleum Displacement	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	Initial Cost	Yearly Cost
2.9%	Utilizing B-20 diesel fuel in	place of regular low sulfur d	iesel		Ļ'		ı
8.3%	Utilizing E10 unleaded fuel	in place of regular unleaded			l		L
0.9%	Utilizing synthetic motor oil	is for some vehicles				[]	·
	Purchased 11 utility vehicle	s instead of small pick up tru	.cks				
-7.7%	Decrease in Efficiency						
2 0%		Organization concernation (
3.0%		Organization conservation in					·
1.3%		Utilizing synthetic motor on	is for all vehicles			too 000	
IBD		Install an E85 fuel tank and	dispenser at NC State Univer	sity		\$90,000	
TBD		Purchased 25 flex fuel vehic	eles to replace older fleet			See Notes	-
		Purchased 10 utility vehicles	s vs. pick up trucks			0	
			E85 fuel tank installed & or	erational - July 2009		\$90.000	-
				Stational vary 2005		φ, σ, σ	
		0.0.4					
Totals	4.4%	9%					
Possible additional	vehicle purchases from	2006 - 2010					
Year	Quantity, Vehicle Type	e and Description	Purpose	Fuel / Hybrid		Additional (Zost
2005	Ordered 14 utility vehicles	vs. trucks	Facilities Maintenance	Gas and/or Diesel		\$(0
2005	Ordered 9 Flex Fuel Pick up	trucks	Facilities Maintenance	E85		\$6,7	/50
2006	Ordered 8 Flex Fuel Pick up	trucks	Facilities Maintenance	E85		\$6,0)00
2006	Ordered 11 utility vehicles v	vs. trucks	Facilities Maintenance	Gas and/or Diesel		\$()
2007	Ordered 25 flex fuel venicle	.S	Facilities Maintenance	E85		\$40,0 \$(000
2007	2 FEV to replace older vehi	/S. IFUCKS	Facilities Maintenance	F85	·		
2003	No vehicle purchased due to	o budget restrictions	l'actitics Mantenance	105			
2010	Vehicle Purchases Budget I	Dependant - TBD					

(a) E10 costs approx. \$.08 more per gallon

(b) The additional cost of purchasing synthetic motor oil will be offset by extended intervals between oil changes

Note: 2006 - Flex Fuel vehicles cost approximately \$750.00 more than regular vehicles

Note: 2007 - Flex Fuel vehicles cost approximately \$1600.00 more per vehicle (Bid out E85 Trucks)

NC STATE UNIV SERV	/ERSITY ICES	Y FLEET		Fleet an	d Fuel R	Reporting		Scott T. Jennir 919-515-9884 scott_jennings	ngs @ncsu.edu			
Fleet Information	200	5-2006	200	6-2007	20	07-2008	20	08-2009	200	9-2010	201	0-2011
Vehicle Type	Total #	Miles	Total #	Miles	Total #	Miles	Total #	Miles	Total #	Miles	Total #	Miles
Gasoline	297	1,100,606	306	1,246,477	319	1,175,765	297	985,174	290	934,891	282	871,552
Diesel	22	97,751	22	114,031	27	114,511	34	143,406	34	156,837	41	181,243
Hybrid	-	-	-	-								
Flex-fueled Vehicles	9	19,596	17	45,363	15	47,641	40	92,214	46	111,329	64	198,399
Comp Natural Gas	-	-	-	-								
Propane	-	-	-	-								
Electric	-	-	-	-								
Emergency/Ed (10%)	-	-	-	-								
Totals	328	1,217,953	345	1,405,871	361	1,337,917	371	1,220,794	370	1,203,057	387	1,251,194
	29%	-9%	29%	0%	35%	-5%	39%	-13%	39%	-14%	45%	-11%
Fuel Information	200	5-2006	200	6-2007	20	07-2008	20	08-2009	200	9-2010	201	0-2011
Fuel Type	Gal	Petr.	Gal	Petr.	Gal	Petr.	Gal	Petr.	Gal	Petr.	Gal	Petr.
Gasoline	66,262	66,262	-	-		-		-		-		-
E10	51,288	46,159	127,536	114,782	123,922	111,530	111,609	100,448	96,522	86,870	97,676	87,908
E85	-	-	-	-		-		-	13,261	1,989	20,237	3,036
Diesel	-	-	-	-		-		-		-		-
B5	-	-	-	-		-		-		-		-
B20	20,768	16,614	22,404	17,923	29,571	23,657	32,824	26,259	35,452	28,362	41,462	33,170
B100	-	-	-	-		-		-		-		-
CNG	-	-	-	-		-		-		-		-
Propane	-	-	-	-		-		-		-		-
	Qrts		Qrts		Qrts		Qrts		Qrts		Qrts	
Petroleum Motor Oils	3,649	912	2,096	524	223	56		-	1,608	402	1,096	274
Syn & Rec Motor Oils	-	-	1,347	-	3,932	-	5,494	-	3,336	-	3,190	-
Total Petroleum Use		129,948		133,230		135,242		126,707		117,623		124,388
% Change in PDP		-2%		-5%		-3%		-9%		-16%		-11%
								PDP goal by 2	2011:		-20.0%	
ref line # 29 JO'N												

Adj 5% for justified growth: applies to '06-'07, '07-08, '08-'09, and '09-'10

Notes/Comments

1. Switched over to E10 2/1/2006

2. FY2005-06 Hurricane Katrina hit - Essential driving only 3. Purchased 5 utility vehicles vs. trucks in 2005, 14 utility vehicles vs. trucks in 2006, and 11 utility vehicles vs. trucks in 2007

Ranger fuel use per year / 355 gallons, Utility vehicle use per year / 144 gallons, 211 gal/fuel saved per utility veh. per year!

08-09: End of year vehicle count is 346 / Approximately 55 vehicles have been surplused this FY - fuel & mileage for the surplused vehicles are included in the totals.

08-09: E85 fuel tank and dispenser has been installed at the Motor Pool and they are now operational.

NC STATE UNIVERSITY FLEET SERVICES

Scott T. Jennings scott_jennings@ncsu.edu

@ncsu.edu

Results Noted (by FY 2009-10) as relate to your PLAN

Plan for FY 2011-2012

	Overall Results from	n all participating fleets	
	FY 2004-05	FY 2009-20)10
Fuel Type	thousand of gallons	thousand of gallons	% change
Gas	14,935	3,165	-79%
E10	598	11382	1803%
E85	242	398	64%
Diesel	8,526	1602	-81%
B5	-	7	
B20	1,870	8157	336%
B100	-	2	
Total Biodiesel as B20	1,870	8,167	337%
CNG	3	0	-92%
Propane	56	5	-91%
Petroleum Motor Oils	48	35	-27%
Syn & Rec Motor Oils	3	6	115%
Total Fuel	26,283	24,760	-5.8%
Total Petroleum	25,581	21,638	-15.4%
T.Fuel (adj. for growth)	26,877	24,760	-7.88%
T.Petro (adj for growth)	26,153	21,638	-17.26%

919-515-9884

veh	icles reported in l	PDP	
	FY 2004-05	FY 200	
Vehicle Types	#	#	
Gasoline	10,816	9,436	
Hybrid	78	129	
Flex-fueled Vehicles	4,752	7,018	
Comp Natural Gas	14	5	
Diesel	4,498	5,066	
Propane	192	150	
Emergency/Ed (10%)	6,007	5,871	
Electric	13	199	
Total	26,370	27,874	

Of the Overall 17.5 % petroleum reduction:

3.95% displaced by reduced mileage (conservation)

4.01% displaced through E10 use

0.49% displaced through E85 use

4.7% displaced through biodiesel use

4.3% displaced through efficiency

Your organization result to date

NC S	TATE UNIVERSITY	FLEET SERVICES	results to date	e (2009-10)		%	Reductions Ca	used by PDF	PActions (by	7 FY 09-10 a	s reported)		
% of Goal	State Organization	Petro Use	Petroleum Displacement Achievements	PDP Actions (Petroleum Reduction)	Miles	E10	E85	В5	B20	B100	CNG	Prop	Syn Moil
79%	North Carolina State Univ	-16%	making progress toward goal- not yet achieved	decreased miles (budget),fewer veh, new E85 being used	-14.5%	6.6%	7.7%	0.0%	4.8%	0.0%	0.0%	0.0%	0.6%
				now									

your organization plan to date

N N	IC STATE UNIVERS	SITY FLEET SERVICES				
				report progress	plan next year and forward	
Petroleum						
Displacement	2005 thru2007	2007-2008	2008-2009	2009-2010	2010-2011	beyond 2011
Actual	-5%	-3%	-9%	-16%	-11%	
-14.5%	result of decreased miles, pos	sitive contribution toward PDP				Continue to replace conventional
6.6%	increased use of E10- signific	cant contribution toward PDP				uneaded vehicles with Eo5 versions
7.7%				use of new E85 dispenser		
4.8%	increased use of B20- signifi	cant contribution toward PDP				Explore for viable electric vehicle
0.6%	use of syn/recycled motor oil	- positive contribution toward PDP				opportunities for service use
-						
previously Noted	T					
2.9%	Utilizing B-20 diesel fuel in	place of regular low sulfur diesel				
8.3%	Utilizing E10 unleaded fuel i	n place of regular unleaded				
0.9%	Utilizing synthetic motor oils	s for some vehicles				
	Purchased 11 utility vehicles	instead of small pick up trucks				
-7.7%	Decrease in Efficiency					
3.0%	-	Organization conservation measures				
1.3%	-	Utilizing synthetic motor oils for all vehicles				
TBD	-	Install an E85 fuel tank and dispenser at NC State Univers	ity			
TBD	-	Purchased 25 flex fuel vehicles to replace older fleet				
		Purchased 10 utility vehicles vs. pick up trucks				
			E85 ruei tank installed & operational-July 2009			

10th largest

fleet

-2010	
6 change	
-13%	
65%	
48%	
-64%	
13%	
-22%	
-2%	
1431%	
6%	

	Res	ults within	10 largest N	C fleets		
		% Chg in		% Chg	PDP %	result of
FY 2009-10	Total fuel	Fuel	Total Petro	Petro	Goal	conservation
NC DOT	11,541	-9	9781	-21%	-20%	-14.98
Dept of Admin MFM	4,828	-9	4350	-13%	-19%	-8.53
Dept of CC & PS	3,356	5	3020	-5%	-10%	-3.55
Dept of Correction	1,568	-17	1366	-26%	-11%	-18.48
DENR	1,032	-19	958	-25%	-13%	-17.72
Health & HS	282	-22	282	-22%	-20%	-15.54
UNC Chapel Hill	296	6	222	-20%	-20%	-17.64
Agr & Consumer Ser.	526	1	484	-6.4%	-20%	-4.55
ECU &	123	-6	112	-14%	-20%	-10.51
ECU Transit	210	40	169	13%	-20%	9.77
NCSU	146	5	118	-16%	-20%	-17.64
Total for ten largest						
fleets	23,908		20862	-20.23	-17.5%	-11.97%

NC STATE UNIVER	RSITY FLEET SERVICES						08-'09 09-'10	10-'11	1		
Soott T. Jonnings	010 515 0994				baseline	e efficiency factor	10.0788 10.0788		-		
scott jennings@ncsu.edu	919-515-9884					efficiency factor	8.3784 8.210		-		
						change indicated	-10.0770 -10.3470				
Conservation and Efficien			your fleet efficiency ap	ppears to h	ave decreased- a	about 18% below b	paseline				
defining steps taken to reduce pe	etroleum consumption										
In the process of reporting PDP 1	results we have been able to directly attribute p	petroleum use changes o	due to: mileage; alterna	ative fuel u	se; number of vel	hicles; use of synth	netic or recycled motor oil. In	directly w	ve have been attri	outing any oth	her change
to "change in efficiency", a positi	ive change may be called "conservation". To be	better define what portion	n of PDP performance	is due to "	change in efficier	ncy or conservation	n" Please answer the followin	ıg:			
Has your agency/department/or	manization initiated any steps not proviously	reported intended to it	mprove fleet vehicle of	ficiency? P	laasa placa " X " a	os appropriata					
2009-'	$'10 \qquad 2010-'11$	reported, intended to in	2009-'10 2010-'11	ficiency? P	lease place Λ a	as appropriate					
YES	X	NO	X								
what did you change? Place "X"	in appropriate box(es)										
examples: a mechanical change of	could include equipment changes to vehicles or	or fueling infrastructure t	to make them more eff	ficient. Nev	hybrid autos or	new fuel card read	ler systems would be mechar	nical. Proc	cess change could	be an accour	nting
system change, vehicle reassignn	nent, or a carpooling system. Behavior could b	be drivers improving fue	el economy by driving	more effici	ently or drivers co	ombining errands	or carpooling to reduce milea	age.			-
	2009-'10 2010-'11		2009	-'10	2010-'11		ļ	200	9-'10	2010-'11]
mechanical			process X		V00 00		behavior	X		20	7
		changed fuel	accounting	110		, 	trained drivers on	yes			
1a changed vehicle types	X X	2a	system X		Х	<u>(</u>	3a economical driving	Х	X		
use fuel management	x	2b reduce	a on-board weight	x	v		reminded drivers to save	x	v		
use on-board idle reduction							set policy on idle				
1c mechanism	X X	2c set carpoo	oling policy	X	X	É	3c reduction	Χ		X	4
		reassigned	vehicles to				evaluate driver behavior				
		2d redu	ice fuel use	X	Х		3d (on economy)		X	Х	
		2e check ti	routinely X		x		carefully observe speed	x	v		
						 ŀ	reward economical	7			1
		eva	luate MPG				driving or punish				
other mechanical system		2f performance	e by vehicle	X	X	<u> </u>	3f inefficient driving		X	X	-
1d change 2	X X	2g	change		х		3g other behavior change				
when did you first shange it? Place	"quarties #" in her best meeting when proceed her	ron There may be multiple									
mecha	nical	gan. There may be multiple	process					behavior			
before 2005		before 2005]			before 2005]		
FY 04-05	v	FY 04-05 EX 05 06	X	-			FY 04-05 FX 05-06		-		
FY 06-07		FY 06-07	X	1			FY 06-07		-		
FY 07-08		FY 07-08]			FY 07-08				
FY 08-09 2 FY 09-10	<u>x</u>	FY 08-09 FY 09-10		-			FY 08-09 FY 09-10	X	-		
FY 10-11		FY 10-11					FY 10-11				
How did you change it? Please note	question # you are referring to.										
examples may include new procedures,	training, or directives affecting vehicle choice or vehicle	le use; installation of new equ	upment to dispense fuel or	account for 1	s use.						
mecha	nical										
1a: Started purchasing E85 vehicles off	state contract. 1b: Updated fuel management system an	nd revamped database. 1d: 10	0,000 gallon E85 fuel tank	installed							
new in FY 2010-'11:											
				-							
201 2006 2007 Channed for 1 house	liev and fuel filling requirements		process								
2a. 2000-2007 Changed fuel key po	and rule mining requirements.										————
new in FY 2010-'11:											
								hehavior]		
Departmental drivers trained on good da	riving habits. Signage reminders on good driver's habits	s posted at fuel site for all us	ers.					ochavior]
	-										
new in FY 2010-'11:											
From your Results Noted tab you	u are now aware of what portion of your PDP	performance change (po	ositive or negative) wa	s attributed	to efficiency and	d conservation last	year.				
Your '09-'10 PDP report indicate	ed -18.54% was attri	buted to change in efficient	ciency. Of the noted ch	anges in ea	ch of these three	categories what pa	art will you attribute to curre	nt and fut	ure activities in e	ich?	
Your answers may	total 0% if not applicable, otherwise the total	will be 100%.				-					
FY 2009-10 mechanical		FV 2000 10	process	Г		6	FY 2009-10 behavior		1		
FY2010-11mechanical		FY 2010-11	process			L L	FY2010-11behavior				
FY 2011-12 mechanical		FY 2011-12	process]			FY 2011-12 behavior]		

baseline efficiency factor 10.0788 10.0788
efficiency factor 8.3784 8.210
change indicated -16.87% -18.54%